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Date: October 22, 2008 Name: Jasper W. Dockrey, Reg. 33,868 Signature: /Jasper W. Dockrey/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Appln. of:	Kroninger, et al.		
Appln. No.:	10/729,882	Examiner:	Mark A. Osele
Filed:	December 5, 2003	Art Unit:	1791
For:	METHOD OF PROCESSING A WORKPIECE, AND A WORK CARRIER, IN PARTICULAR OF POROUS CERAMIC	Conf. No.:	9196
Docket No:	10808/116		

PRE-APPEAL BREIF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

The applicants hereby request a pre-appeal review pursuant to the Pre-Appeal Brief Conference Pilot Program set forth in 1296 Off. Gaz. Pat. Office 67 (July 12, 2005).

A Notice of Appeal and fee payment authorization are attached hereto.

The applicants' remarks begin at page 2 of this paper.

REMARKS

The Examiner issued a final Office Action for the above-referenced application on August 13, 2008. In the final Office Action, the Examiner rejected all of the applicants' pending claims under 35 U.S.C. §103(a) over U.S. Pat. No. 6,470,946 to De, in view of U.S. Pat. Pub. No. 2002/0078559 to Buchwalter et al. (now U.S. Pat. No. 6,698,077) and U.S. Pat. No. 4,906,011 to Hiyamizu et al.

The Examiner asserts that De teaches the use of an adhesive to adhere a semiconductor workpiece to a porous workcarrier. After thinning the workpiece, a solvent is applied to release the workpiece from the workcarrier. (Office Action, pg. 2). The Examiner acknowledges that De does not teach a particular type of adhesive, and that De does not disclose a porous workcarrier having interconnected pores. Buchwalter et al. is said to teach a porous workcarrier that fluid can penetrate, and an adhesive that holds semiconductor elements to the workcarrier. Buchwalter et al. uses vacuum pressure to hold the semiconductor elements to the workcarrier. The Examiner asserts Hiyamizu et al. teach that the infiltration of the pores in a vacuum chuck by an adhesive can be controlled by selecting a particular viscosity of the adhesive. (Office Action, pg. 3). Hiyamizu et al. is said to further teach that porosity and pore size of a vacuum chuck are result effect variables for adhesive infiltration. (Office Action, pg. 4). The applicants respectfully traverse this rejection.

The applicants assert that, a *prima facie* case of obviousness is not established by the combination of the cited references at least because the cited references, even when combined, do not suggest or disclose all of the features of the applicants claimed process and structure. The applicants assert that all words in their claims must be considered in judging patentability. See MPEP §2143.03. Further, impermissible hindsight must be avoided and any conclusion must be reached from the facts gleaned from the prior art, and not from the applicants' specification and claims. See MPEP §2142. Further, references cannot be combined if doing so would render a reference unsatisfactory for its intended purpose. See MPEP §2143.01V.

The Uniformly-Spaced Through Holes of De Do Not Suggest An Interconnect Pore Network

De discloses a carrier (406) to which a semiconductor wafer (402) is affixed by means of an adhesive (404). (See Col. 5, ll. 44-53). The carrier (406) includes a plurality of through holes (428). The through holes allow solvent to contact and dissolve the adhesive (404) during demounting of a wafer (402) from the carrier (406). (See Col. 5, ll. 62-67, Col. 6, ll 1-3). In operation, the solvent flows through the through holes and attacks the adhesive from the backside of the wafer. The action of the solvent removes the adhesive from the carrier-wafer interface as the assembly comes into contact with the solvent. (See Col. 6, ll. 24-34). Accordingly, De discloses a carrier having a series of through holes that act as conduits for a solvent that is delivered to dissolve the adhesive at the carrier-wafer interface.

De fails to suggest or disclose a work carrier that includes a plurality of pores at least a portion of which are interconnected, as acknowledged on page 2 of the instant Office Action. Further, De fails to suggest or disclose pores that are configured to accommodate a portion of a liquefied solid upon application of vacuum pressure to the work carrier. In contrast, De simply uses an adhesive to adhere the wafer to the carrier, and does not suggest or disclose a method or work carrier in which a liquefied, then hardened adhesive occupies an interconnected pore network.

The Addition of Buchwalter et al. Does Not Overcome The Deficiency Of De

Buchwalter et al. disclose a process in which a transfer plate (404) is brought into contact with a photoresist layer (402). The photoresist layer overlies chiplets (202) arrayed on a glass substrate (302) and separated therefrom by a parting layer (306). (See Para. 0052). Heat, pressure, or solvent vapors are employed to cause the photoresist layer to adhere to the transfer plate. Although Buchwalter et al. disclose that the transfer plate may be porous to improve adhesion of the photoresist layer to the transfer plate, there is no suggestion that the transfer plate have interconnected pores. Further, there is no suggestion that the pores be configured to accommodate a liquefied solid upon application of

vacuum pressure to the work carrier. Instead, Buchwalter et al. disclose the use of heat, pressure, or exposure to solvent vapors to cause a photoresist to adhere to a transfer plate. Accordingly, Buchwalter et al., like De, do not suggest or disclose a method or structure in which an interconnected pore network accommodates a liquefied adhesive upon the application of vacuum pressure.

Hiyamizu et al. Disclose A Technique For Permanently Bonding A Resin To A Metal And Is Not Properly Combinable With De And Buchwalter et al.

Hiyamizu et al. disclose a suction head made from a thermoplastic resin. The suction head (4) is fabricated such that the thermoplastic resin contains open pores that serve as vacuum ducts. (See Col. 2, ll. 31-49). The suction head (4) is permanently mounted on and adhesively bonded to the upper surface (6) of a metal chuck base (1). To overcome the difficulty in permanently bonding a thermoplastic resin to a metal, Hiyamizu et al. further disclose that the pores are receptive to the adhesive and that the infiltration of the adhesive can be controlled by adequately selecting the type and viscosity of adhesive, the type of thermoplastic resin, and the characteristics of the resin, such as viscosity and poor diameter. (See Col. 3, ll. 10-30).

Hiyamizu et al. do not suggest or disclose a work carrier that accommodates the fastening of a workpiece to a porous work carrier by means of a solid that is applied in liquefied form. Further, there is no teaching of a process or structure in which the workpiece is in intimate contact with the adhesive. Instead, Hiyamizu et al. disclose a resin suction head that is permanently fastened to a metal chuck by an adhesive. Accordingly, Hiyamizu et al. do not suggest or disclose a method or structure in which a liquefied adhesive is temporarily accommodated in an interconnected pore network, followed by application of a solvent to release the workpiece.

The Examiner alleges that it would be obvious to combine the permanent, resin-metal adhesive anchor of Hiyamizu et al. with the temporary bonding methods used by De and Buchwalter et al. The applicants assert that one skilled in the art would not combine Hiyamizu et al. with either De or Buchwalter et al., at least because the permanent adhesive bond taught by Hiyamizu et al. would

compromise the methods of De and Buchwalter et al. De discloses a wafer demount gas distribution tool that drops a wafer onto pedestals when a solvent dissolves the adhesive temporarily holding the wafer to the carrier. Similarly, Buchwalter et al. disclose a method for fabricating display devices in which a transfer plate temporarily holds chiplets for transfer from one substrate to another substrate. The permanent bond of Hiyamizu et al. would render these processes inoperative. Accordingly, such a combination would defeat the purpose of De and Buchwalter et al. and, therefore, one skilled in the art would not be motivated to use the permanent adhesive of Hiyamizu et al. in the temporary transfer processes of De and Buchwalter et al.

It is well established that "[i]f the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." See MPEP §2143.01V.

In view of the failure of the cited references to suggest or disclose all of the elements of the applicants claimed method and structure, the combination of these references does not establish a *prima facie* case of obviousness. This is at least because there is no motivation to combine Hiyamizu et al. with De and Buchwalter et al. and, even when combined, the references do not teach or suggest the applicants' claimed method or structure. In view of the foregoing remarks, the claims at issue distinguish over the cited references and are in condition for allowance. Accordingly, such allowance is now earnestly requested.

Respectfully submitted,

Dated: October 22, 2008

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